

## MISCELLANEOUS PLANT NOVELTIES FROM ALASKA, NEVADA, AND UTAH

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ABSTRACT.— Described as new to science are *Abronia argillosa* Welsh & Goodrich, from Utah and Colorado; *Androsace alaskana* Cov. & Standl. var. *reedae* Welsh & Goodrich, from Kohlsaak Peak, Alaska; *Lepidium ostleri* Welsh & Goodrich, from Beaver County, Utah; *Lygodesmia entrada* Welsh & Goodrich, from Grand County, Utah; *Pediocactus despainii* Welsh and Goodrich, from Emery County, Utah; and *Senecio toyibensis* Welsh and Goodrich, from the Toyibabe Range in Nye County, Nevada.

Several undescribed and unnamed taxa have accumulated at the herbarium of Brigham Young University in recent years. Mainly they represent materials which have been treated within other taxa, or they are oddities of exceedingly limited areal extent. Some have been known for long periods of time. Others are only recently discovered. All are unique in one or more ways and of sufficiently limited apparent distribution as to be candidates for inclusion on lists of sensitive species.

### *Abronia argillosa* Welsh & Goodrich, sp. nov.

Plantis similis *Abronia fragranti* Nutt. et *Abronia elliptica* in habitas sed differt in anthocarpus alarum nullis rostro nullo gracilioribus, in receptaculo conico et fructibus instructis superioris foliis floribus et anthocarpis glabris, et floribus paucioribus.

Plantae perennes e caudicibus ramificantibus gracilibus (6) 15–30 cm altae; caules glabri ad basim rubellos saepe frondosi omnino; folia (5) 15–35 mm longa, 3–35 mm lata elliptica ovato obovata vel suborbiculares glabra; pedunculi 1–8 cm longi glabri vel puberulentes raro; bractae 7–15 mm longae, 6–15 mm latae ovaes vel orbiculares scariosae glabrae vel ciliolatae; flores 15–22 in quoque inflorescentiam; perianthi tubus 10–15 mm longus viridis glaber vel raro puberulentus limbus ca. 6 mm latus albidus; receptaculum breve conicum ferens fructus in dimidio superiore anthocarpus sine alis sine

rostris plicatus leviter vel nullus 7–9 mm longus 3–4 mm latus scariosus glabri rugosus alborostratus; semina 2.5–3 mm longa 1 mm lata.

HOLOTYPE: Utah, Grand Co., T22S, R24E, Sec 18, ca. 6 miles due south of Cisco at ca. 4300 feet elev., on Mancos Shale Formation, in an *Atriplex* community, S., E., and M. Welsh 16689, 30 May 1979 (BRY, 8 isotypes to be distributed).

PARATYPES: Utah, Grand Co., Fifteen miles east of Thompson, B. F. Harrison et al 10403, 16 June 1941 (BRY); first escarpment north of Thompson, west of Seago Canyon, S. L. Welsh 6943, 1 May 1968 (BRY); T22S, R24E, Sec 7, ca. 4 mi. south of Jet. 50-6 and U-128, S. L. Welsh and K. Taylor 14637, 28 April 1977 (BRY); T18S, R25E, Sec 27, ca. 20 mi. NE of Cisco, S. L. Welsh 14916, 8 June 1977 (BRY). Uintah Co., Ca. 2 mi. S of Dragon, S. L. Welsh 5379, 13 May 1966 (BRY). Colorado, Mesa Co., ca. 5 mi. W of Mack along US Hwy 6-50, L. C. Higgins and S. L. Welsh 1034, 14 June 1967 (BRY); ca 13 Km due NW of Mack, T9S, R104W ca. Sec 11, A. Cronquist 11427, 25 May 1976 (BRY;NY).

The clay verbena, *Abronia argillacea* Welsh and Goodrich, is restricted to the Grand River Valley, and less commonly in the drainage of the White River in east-central Utah and west-central Colorado, where it occurs on heavy soils derived from Mancos Shale and Green River formations. It seems probable that the taxon was taken much prior to the specimens cited above, but was

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Fig. 1. *Abronia argillosa*: A, habit of plant.

overlooked due to the superficial resemblance to phases of *A. elliptica* A. Nels. and to *A. fragrans* Nutt. ex Hook.

The plants are glabrous or essentially so and possess orbicular leaves which are glaucous. The genus has been revised by Gal-

loway (1975), who distinguishes *A. elliptica* (common and widespread in Utah) from *A. fragrans* (cited from San Juan County only) by technical characters of the anthocarps. The following key will distinguish *A. argillosa* from those taxa.

1. Anthocarps with 2 wings, these folded together to form a deep groove; plants of western Colorado and westward ..... *A. elliptica* A. Nels.
- Anthocarps wingless, or, if winged, then the wings not folded together; plants of eastern Utah and eastward ..... 2
- 2(1). Anthocarps beaked, deeply grooved or narrowly winged; leaf blades variable in shape, glandular-puberulent to glandular-pubescent; plants usually of sandy soils in San Juan Co., Utah, and eastward in Colorado ..... *A. fragrans* Nutt. ex Hook
- Anthocarps beakless, slightly or not at all folded; leaf blades mainly orbicular, glabrous; plants usually of clay soils in Uintah and Grand counties, Utah and Mesa Co., Colorado ..... *A. argillosa* Welsh & Goodrich

*Androsace alaskana* Cov. & Standl. ex Hulten

var. *reedae* Welsh & Goodrich, var. nov.

Similis *Androsace alaskana* Cov. & Standl. in scapis numerosis floribus sessilibus solitariis vel binatum, sed differt scapis numerosioribus brevioribus gracilioribus pubescentioribus, foliis integris parvioribus dense villosis, et floribus parvioribus.

Herbae annuae vel biennis; scapi 25–40 in quoque rosellam 10–45 mm longi filiformes 0.3–0.5 mm in diametrum pubentes parce vel dense pilis furcatis apprime infra flores juxta; folia 5–10 mm longa 1–3 mm lata linearia vel spatulata integra vel denticulata cum 1–2 dentibus glabra infra vel pilis ad costam juxta apicem supra dense villosa pilis multicellulosis furcatis vel simplicibus apprime ultra medium; flores solitarii vel imparibus aliquando bractaea subtenda tubus calycis subaequali; tubus calycis 2–3 mm longus, dentibus circa 1.5 mm longis; corolla alba tubo calyce subaequali lobus circa 2 mm longis; capsulae maturae ignotae.

HOLOTYPE: Alaska, Lat. 62°12'N., Long. 152°47'W, ca. 2 mi. SSW of Kohlsaak Peak, near VABM 5048, at 4900 feet (1495 m) elev., on rocky ridge top, K. Reed 5857, 29 June 1977 (BRY, isotype at Leningrad).

PARATYPE: Yukon Territory, Canada, Mount St. Elias Quad.: Outpost Mt. at south

end of Kluane Lake, 60°56'N, 138°22'W, at ca. 2140 m., D. F. Murray 3014, 22 July 1969 (BRY; ALA).

The materials herein segregated as var. *reedae* represent the slender peduncled, subentire- to entire-leaved, smaller, flowered high elevation phase of *A. alaskana* in interior Alaska and southwestern Yukon. That the morphological differences noted in the protologue might be the result of ecological response has been considered. The tendency to entire leaves and less pronounced ciliate margins, along with slender peduncles and flowers that seem to average smaller, indicate a syndrome of characteristics which should receive at least some taxonomic recognition.

The plant is named to honor the collector of the holotype, Katherine Reed of Anchorage, Alaska.

*Lepidium ostleri* Welsh & Goodrich, sp. nov.

Habitu *Lepidio nano* S. Wats sed differt in inflorescentia longiore floribus numerosioribus foliis longioribusque pubentioribus et sepalis pubentioribus.

Herbae perennes pulvinatae caespitosae caudice ramoso folium basim marcescentibus; caules fructifri 10–35 mm alti hirsuti; folia 4–15 mm longa hirsuta linearia et integra vel basalia 3–5 lobatis vulgo caulina nulla vel pauca; racemi circa 1 cm longi in florem et

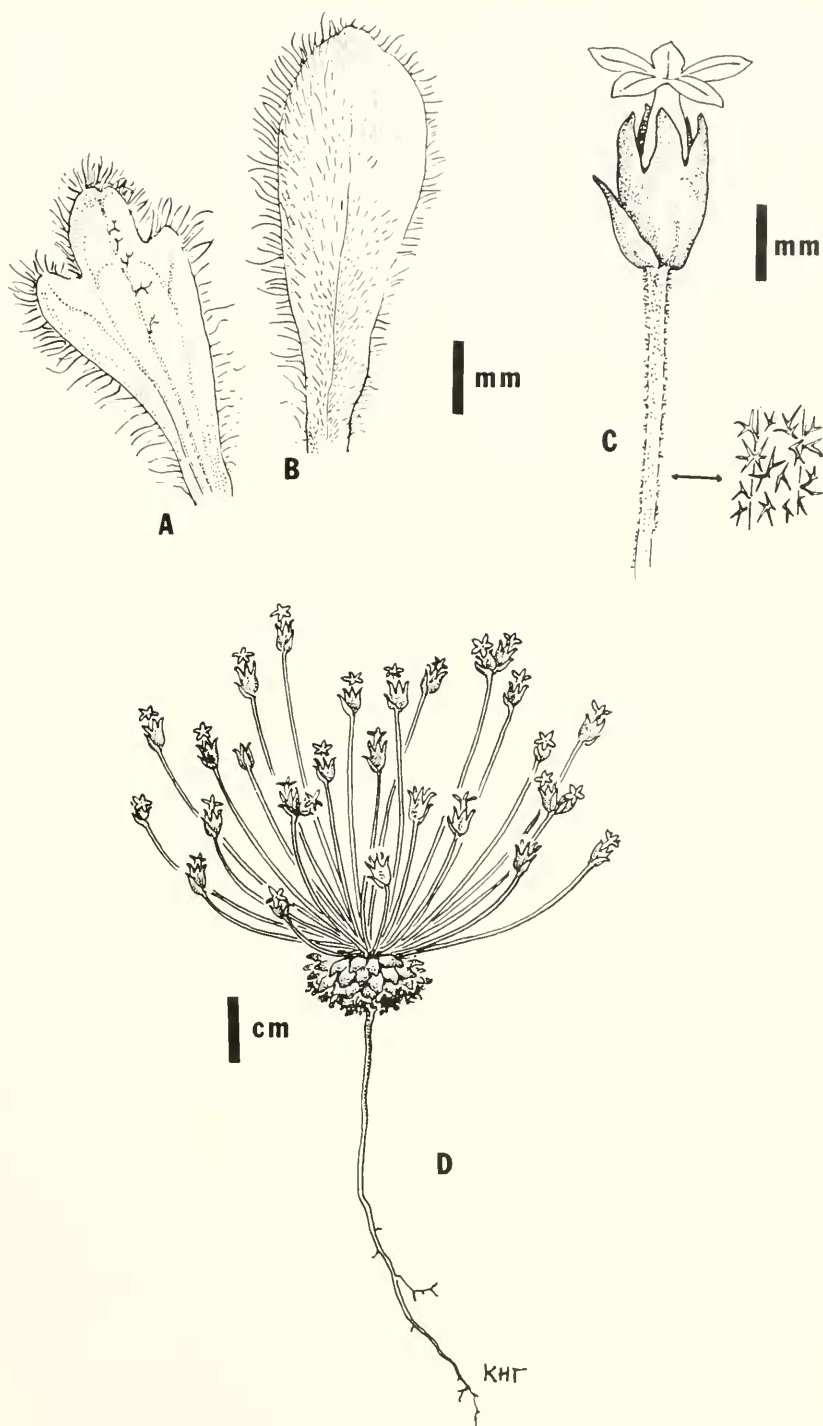


Fig. 2. *Androsace alaskana*: A, adaxial side of leaf; B, abaxial side of leaf; C, close-up of stem and inflorescence; D, habit of plant.

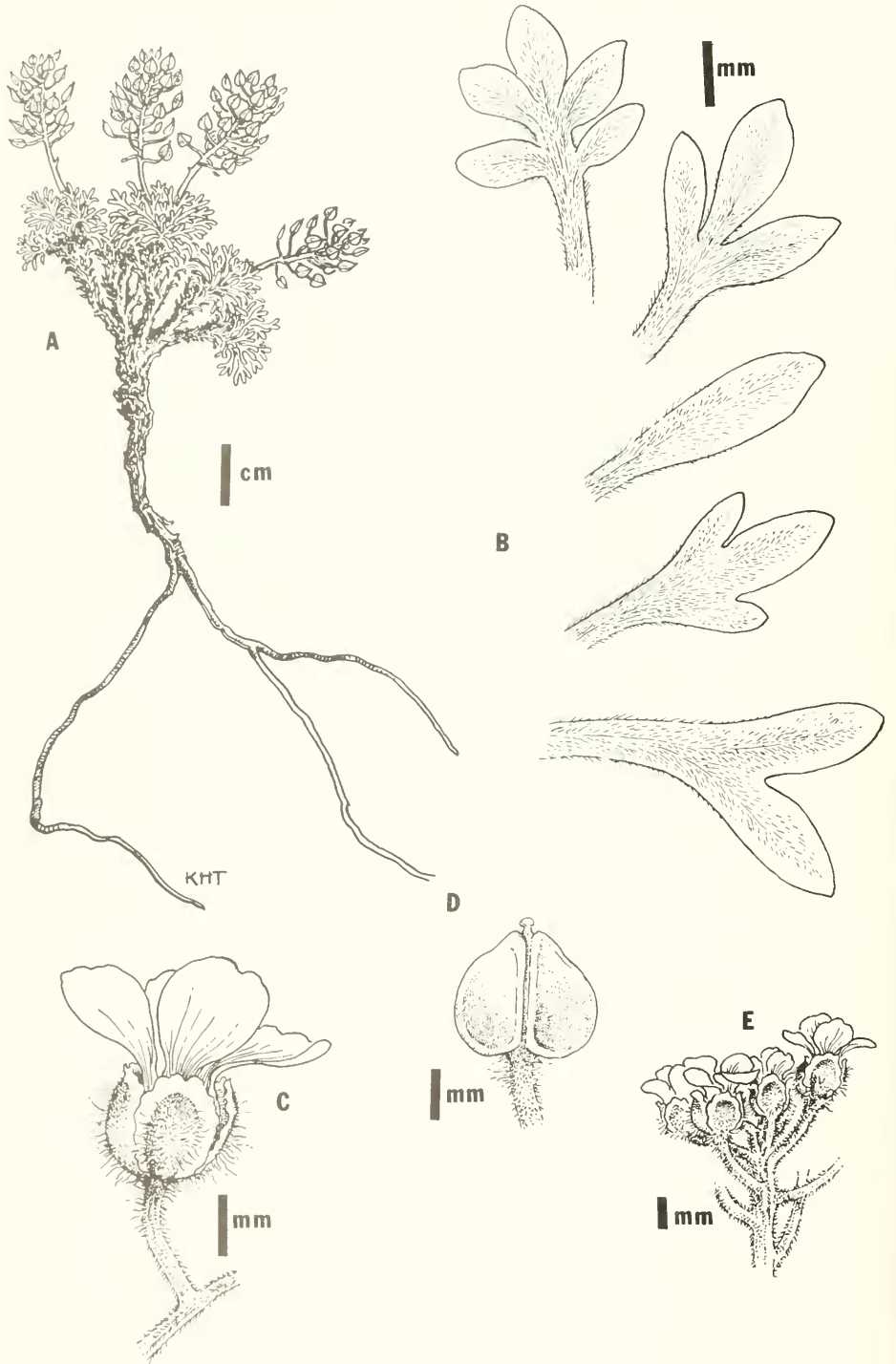


Fig. 3. *Lepidium ostleri*: A, habit of plant; B, close-up of leaves showing variation; C, close-up of flower; D, close-up of fruit; E, close-up of inflorescence.

1–2 cm longi in fructem 5–25 floribus; pedicelli in fructem 2–3 mm longi; sepala 1.3–2 mm longa obtusa hyalina aspre pilosa saepe purpurascens; petala 2–3 mm longa alba purpurascens; fructus 2.5–3 mm longa, 2.3–2.5 mm lata ovata late usque ad 1 mm crassa sinus 0.2 mm profundus; stylus 0.4–0.7 mm longus.

**HOLOTYPE:** Utah, Beaver Co., T27S, R13W, Sec 23 (SW¼), San Francisco Mountains, at Frisco, on rocky ridge, in pinyon-juniper community, K. Ostler and D. Anderson 1258, 6 June 1978 (BRY).

**PARATYPES:** Utah, Beaver Co., T27S, R13W, Sec 23 (NW¼), near Frisco, 6900 feet, rocky slopes, K. Ostler and D. Anderson 1210, 1 June 1978 (BRY); do, T27S, R13W, Sec 16 (SE¼), San Francisco Mountains, near Utah Hwy 21, at 5800 ft, on west slope, dry limestone, *Atriplex* community, K. Ostler 1415, 19 June 1978 (BRY); do, west slope of San Francisco Mountains, bristlecone pine, ponderosa pine, Douglas fir, white fir community, K. Ostler 1588, 5 July 1978 (BRY).

The obvious relationship of this perennial dwarf species lies with the *Lepidium nanum*, an endemic of Nevada. The longer racemes, greater flower number, and dense pubescence constitute the most important diagnostic features. The petals of *Lepidium ostleri* are white, while those of *L. nanum* are yellow to cream yellow. While probably of less importance than other features, the color of the petals becomes important when taken with the differences in raceme, flower number, and pubescence features.

The species is named in honor of its collector, Dr. Kent Ostler, an enthusiastic collector and botanist.

***Lygodesmia entrada* Welsh & Goodrich, sp. nov.**

Ab *Lygodesmia grandiflora* Nutt. in caulibus rigidioribus ramosissimis foliis brevioribus et paucioribus et radiis albis differt.

Herbae perennes caudice subterraneo ramosissimo omnino usque ad 45 cm altae; folia integra linearia vel acicularia 5–30 mm longa; pedunculi potius numerosi bracteati elongati 12–20 cm longi in capitulum terminans; bractee involucrorum hyalinae exteriores 5–10 mm longae fimbriatae interiores circa sex 16–18 mm longae apex puberulus;

radii albi circa 3 cm longi; pappus barbellatus sordidus setae 10–15 mm longae; achena costata glabra.

**HOLOTYPE:** Utah, Grand Co., T24S, R19E, Sec 25, Tusher Canyon, ca. 15 mi. due WNW of Moab, 4800 feet elev., Entrada Sandstone Formation, juniper community, S. L. and S. L. Welsh 16725, 3 June 1978 (BRY, four isotypes to be distributed).

This white-flowered material has been identified by A. S. Tomb (pers. comm.) as a probable triploid assignable to *Lygodesmia arizonica* Tomb. The triploid hypothesis cannot herein be questioned because of lack of knowledge concerning the cytological nature of the plants in question. However, despite the ultimate disposition of these plants following future determinations of chromosome numbers, the strikingly different morphological features dictate taxonomic recognition, if for no reason other than the fact that the plants are so different from other plants of *Lygodesmia* in Utah.

A second collection at BRY, here assigned to *L. entrada*, is J. S. Allen 132, from north of Courthouse Wash Ridge in Arches National Park. Dried flower remnants appear to be pink, but the tall nidularius habit and definitely ligneous stems and branches are apparent.

*Lygodesmia arizonica* Tomb is a low herbaceous plant usually of more southern distribution in Utah. Even in late anthesis the stems are herbaceous and lack the characteristic bird's nest appearance of *L. entrada*. *Lygodesmia entrada* differs from *L. grandiflora* in ways similar to those discussed for *L. arizonica*.

***Pediocactus despainii* Welsh & Goodrich, sp. nov.**

Ab *Pediocacto bradyi* L. Benson differt in spinis paucioribus brevioribus gracilioribus et floribus colorum.

Plantae carnosae hemisphaericae depressae 3–6 cm in diametrum 4–8 cm longae; tuberculi ovata numerosa ordinata in serialia circularia vel spiralia; areolae spinis 8–14; spiniae 2–5 mm longae serialia stellatim; pilis coactis instructis interdum; flores 2.5–4 cm diametrum fragrantis ad apicem gerenti; sepala numerosa; petala numerosa albida suffusa rosea et flava; stamina numerosa lutea



Fig. 4. *Lygodesmia entrada*: A, habit of plant; B, close-up of achene.

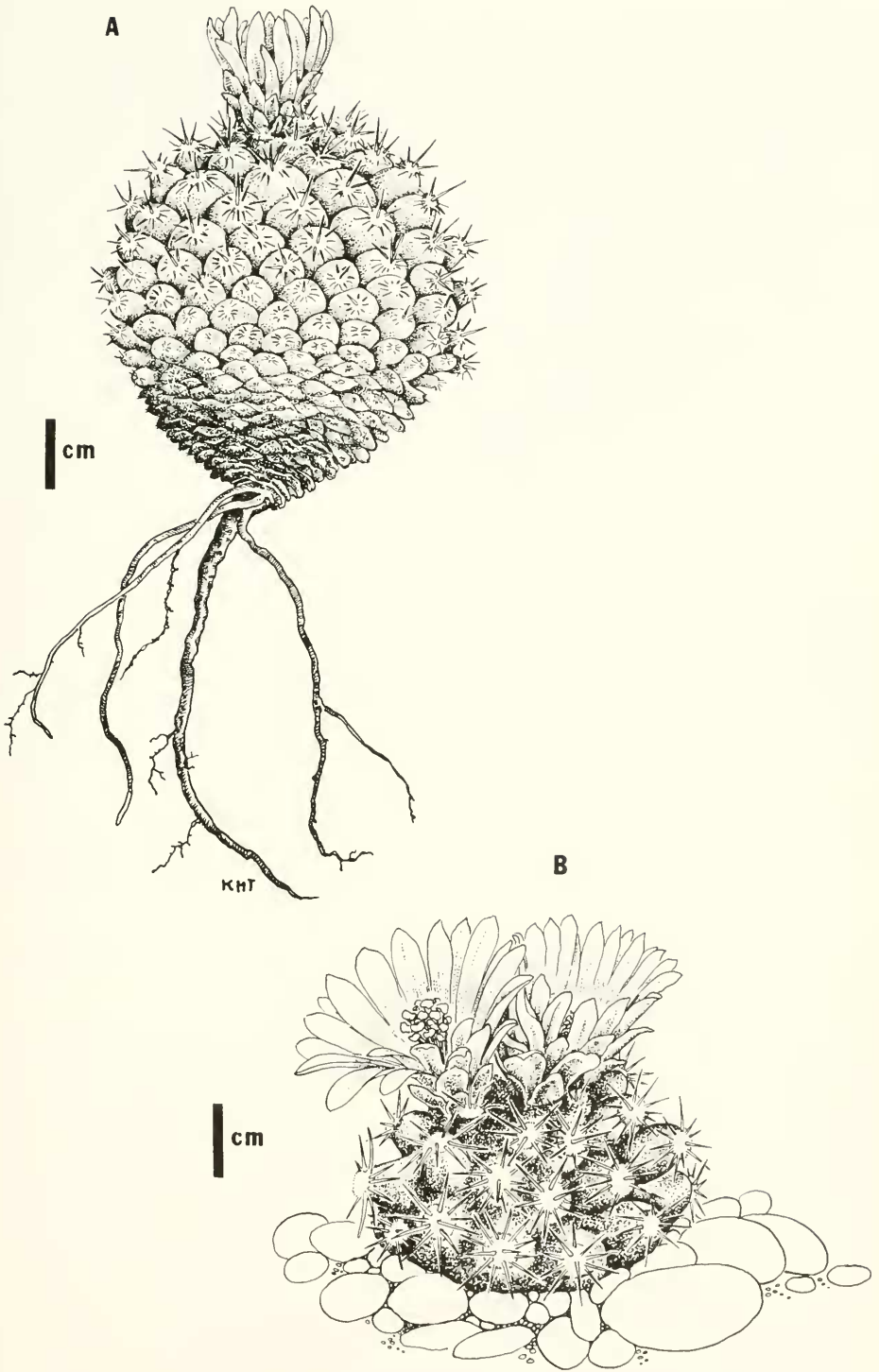


Fig. 5. *Pediocactus despainii*: A, habit of plant; B, habitat of plant.



omnino; stigmata numerosa lutea omnino; fructus 8–9 mm diametrum 10–12 mm longus operculo circumscissili umbone 8–9 mm diametrum 5.5–6 mm alto; fructus corpi 8–9 mm diametrum 5.5–6 mm longus findens longirostrorum coloris viridis ad porphyreus; seminum 3–3.5 mm longum 2–2.5 mm latum varicosis tuberculatibus minutibus.

HOLOTYPE: Utah, Emery Co., San Rafael Swell, Despain 266a, 5 May 1978 (BRY).

PARATYPES: Utah, Emery Co., San Rafael Swell, Despain 445, 15 May 1979 (BRY); do, E. Neese & K. Thorne 504, 7 May 1979.

The Despain pediocactus is a diminutive cactus of very local distribution in the San Rafael Swell of Emery County, Utah. Exact locality is not given so as to provide a measure of protection of this species from amateur and commercial fanciers. The species is compared in the protologue to *P. bradyi*, from which it differs as indicated. It is similar to the newly described *P. winkleri* (Heil 1979) from Wayne County, but differs inter alia in the monocephalous nature, stems which average larger (3–6 cm in diameter vs. 2–2.6 cm), larger flowers (2.5–4 cm broad vs. 1.7–3 cm), and shorter capsules (5.5–6 mm long vs. 7–9 mm).

The species is named in honor of its discoverer, Mr. Kim Despain, student of the flora of the San Rafael Swell.

*Senecio toiyabensis* Welsh & Goodrich, sp. nov.

Ab *Senecio fremontii* T. & G. foliis integris angustis et statura elata differt.

Herbae perennes caudicibus ramificantibus ligneis; caules 15–60 cm altae glabri vel pubescentes parce; folia accrescentia sursum magniora linearia integra vel denticulata 2–8 cm longa 2–7 mm lata; bracteae diminutae; inflorescentia corymbosa; bracteae involucrium ca 13, 6–8 mm longae margines hyalini apices acuti pilosi breves vel glabri raro rubentes interdum; radii 8 vel pauciores circa 1 cm longi lutei; achenia scabra.

HOLOTYPE: Nevada, Nye Co., Toiyabe National Forest; Toiyabe Range, just under the crest of the range on the leeward side, above Timblin Cr., 35 air miles SW of Austin, 100–500 yards N of French VABM, T13N, R42E, near center of Sec. 4, 10,500 feet, in cracks of metamorphic rocks and talus, with

*Artemisia michauxiana*, *Penstemon watsonii*, *Eriogonum microthecum*, *Philadelphus microphyllus*, and *Sphaeromeria cana*, Goodrich 12235, 30 Aug. 1978 (BRY; numerous isotypes to be distributed).

PARATYPES: Nevada, Nye Co., Toiyabe National Forest, Toiyabe Range, along or near the crest of the range between San Juan-Tierney Creeks and McLeod Cr., T14N, R43E, in or near W½ of Sec. 11, 9800–10,000 feet, on metamorphic precambrian outcrops, talus and rocky ground, Goodrich & Schlatterer 12156, 10 Aug. 1978 (BRY); do, north rim of Aiken Creek, very near the Lander-Nye Co. marker; T15N, R43E, Sec. 17, NE¼ of SE¼, 10,800 feet, on rocky slope; growing with *Cymopterus petraeus*, *Haplopappus macronema*, *Penstemon speciosus*, *Oryzopsis hymenoides*, and scattered *Pinus flexilis*, Goodrich 12138, 5 Aug. 1978 (BRY); Nevada, Lander Co., east side of Bunker Hill, 16.5 mi. 187° from Austin, N39°15'25–35" W117°7'10–20", 11,000 ft., steep, rocky limestone slopes, Goodrich 13338, 10 July 1979 (BRY).

The Toiyabe groundsel is a near congener of *S. fremontii* from which it differs in having linear entire leaves (not ovate or obovate to oblanceolate and dentate). The leaves are 2–7 mm wide, compared to 1–4 cm wide in *S. fremontii*. Stems are mostly erect and are 1.5–6.0 cm tall when in anthesis.

In the key to group X. Triangulares by Barkley (1978), *S. toiyabensis* would require modification as follows:

2. Plants taprooted, or with a sub-rhizomatous caudex surmounting a taproot.
  3. Leaves linear, entire; plants 1.5–6 dm tall, restricted to the Toiyabe Range, Nevada ..... *S. toiyabensis*
  3. Leaves ovate or obovate to oblanceolate, dentate; plants 1–3(4) dm tall, distribution not as above ..... *S. fremontii*
2. Plants variously fibrous rooted or with a persistent caudex but not taprooted.

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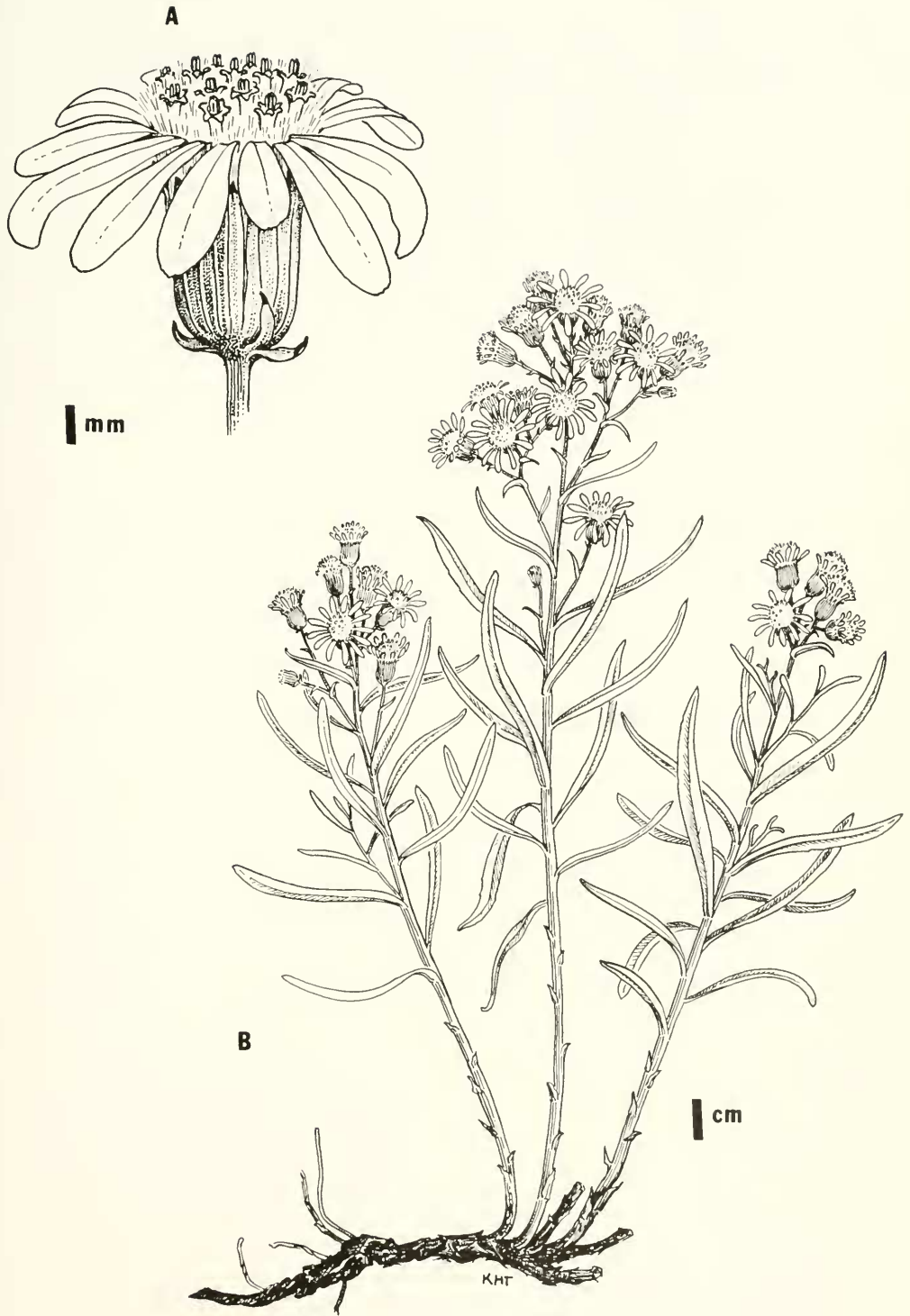


Fig. 6. *Senecio toyabensis*: A, close-up of flower; B, habit of plant.

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